



A CATTLE FLY TRAP FOR THE CONTROL OF HORN FLIES

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The horn fly (Haematobia irritans (L.)) is one of the important insect pests attacking cattle in the United States. In areas of horn fly abundance the cattle industry suffers severely, as evidenced by the loss of flesh and the reduction of the milk supply. Furthermore, these biting flies often produce sores that become infested with screwworms (Cochliomyia americana C. and P.).

There are several methods of reducing the numbers of horn flies. These are: (1) Scattering the cattle droppings so that they will dry rapidly and the larvae will thereby be killed, (2) applying fly sprays, (3) treating cattle manure with chemicals, (4) giving the cattle an internal medication which will render the droppings toxic to horn fly larvae,^{1/} (5) using splash boards on vats in which cattle are dipped, and (6) operating traps that capture the flies on the cattle. The effectiveness of these varies in scope and practicability.

An effective, inexpensive, and practical method of horn fly control is the operation of the cattle fly trap^{2/} developed by the Bureau of Entomology and Plant Quarantine. This trap has proved effective, both on the range and at dairies, not only in controlling the horn fly but also in greatly reducing the population of another serious pest, the stable fly (Stomoxys calcitrans (L.)).

^{1/}Bruce, W. G. The use of phenothiazine in the medication of cattle for the control of horn flies. Jour. Econ. Ent. 32 (5): 704-706. 1939.

^{2/}Bruce, W. G. A practical trap for the control of horn flies on cattle. Jour. Kans. Ent. Soc. 11 (3): 88-93, illus. 1938.

Description of Trap

The trap is of simple construction and can be built at a relatively small cost by any person handy with tools (see attached drawings and specifications). The framework of the trap is 7 feet wide, 6 feet high, and 10 feet long. The base of the frame is made of 2- by 8-inch lumber and the remainder of 2- by 4-inch lumber. All pieces are securely bolted together with 3/8-inch bolts. The top is made of any inexpensive lumber or other opaque material. The passageway through the trap is 33 inches wide and approximately 6 feet high, and is lined along the sides with heavy, large-mesh, wire fencing. This heavy wire fencing extends around the ends of the frame, and three strands of barbed wire connect the outermost uprights so as to protect the trapping elements from being damaged by the cattle. On each side of the passageway, set behind the fencing, are three screen trapping elements, each 37-1/2 inches wide, 9 inches deep, and 5 feet high. These screen trapping elements are made of 18-mesh screen and are of a modified tent-trap construction, i. e., the screen on the side of the element facing the passageway is folded in a series of Z's. (Note in drawings (fig. 2, F) that the almost horizontal parts of the Z's are slightly inclined to forestall the accumulation of dead flies thereon.) The holes through which the flies enter the trapping element are three-sixteenths by three-eighths of an inch in size and are placed three-fourths of an inch apart along the inner acute angles of the Z's. These holes are easily and quickly made by the use of a three-eighths-inch cold chisel with the cutting edge notched like a V (fig. 3). Each trapping element may be provided with a door for use in removing the dead flies, or the whole back may be removed for that purpose.

Two sets of curtains and six or eight weighted strips are used to dislodge the flies as the cattle pass through the trap. Each set of curtains consists of three pieces of heavy, dark-colored canvas -- two pieces 20 inches by 6 feet and one short piece 24 by 30 inches. The two long pieces of one set are attached to the frame at the top and part way down the sides of the passageway between the first and second pairs of trapping elements. These long curtains, being fully half as wide as the passageway, meet at the center. The short curtain is suspended from the top on the opposite side of the cross piece to which the long curtains are attached. This short curtain serves to brush the flies from the backs of the cattle and also to darken the space above the animal, which is opened by the parting of the long curtains. The other set of curtains is installed in the same manner between the second and third pairs of trapping elements. The weighted strips are made of three thicknesses of heavy canvas 4 inches wide and 6 feet long and are suspended from the X-shaped cross pieces at the top between the two sets of curtains. The weights may be small pieces of lead, iron, or other heavy material weighing about 4 ounces and riveted to the lower end of the strip. These weighted strips flap about the body and legs of the animal as it passes through the trap and dislodge flies not reached by the curtains.

Location of Trap

The trap must be located in a place where the cattle will be compelled to use it frequently. An ideal location is in a lane where the cattle must pass through the trap on their way to and from water or to a dairy barn. Or a fence can be constructed around the water supply and the trap placed in the gateway. Such locations insure daily use of the trap and, obviously, the more often the cattle go through the trap the more pronounced will be the control of horn flies.

The trap should be set up several weeks before the fly season so that the cattle will become thoroughly familiar with it and the trap be in full operation before the flies become annoying. The process of familiarizing cattle with the trap is slow but important. After the trap has been set up the cattle should be permitted to pass through it for a week or more before any of the curtains or strips are installed. Then the curtains and strips are added, piece by piece, at 2- or 3-day intervals until all are in place. No difficulty has been experienced in familiarizing cattle with the trap, even with wild range cattle. Once they get used to the trap the cattle will use it of their own accord when flies become annoying.

Care of Trap

After the trap is in operation it needs little attention. There is nothing to get out of order. However, it is advisable to make weekly inspections and, at time of inspection, to remove dead flies and destroy spider webs. Occasionally hair from shedding cattle will collect on the screen Z's, particularly along the lower two or three rows. This, and any other foreign material, should be removed so the holes through which the flies enter will not become clogged.

Bill of Materials for Building the Trap

Amount	Lumber	Letters referring to figures 1 and 2	Where used in trap
2 pieces	2" x 4" x 10'	A, B, C, D, I-a	Frame, top.
2 pieces	2" x 4" x 51"	I-h'	X-shaped cross members.
2 pieces	2" x 8" x 10'	A, B, C, D-b	Frame, bottom.
4 pieces	2" x 4" x 7'	A, B, C, I-c	Frame, long cross pieces.
2 pieces	2" x 4" x 3'	C, I-h	Frame, short cross pieces.
12 pieces	2" x 4" x 6'	A, B, C, D, I-e & f	Frame, uprights.
14 pieces	1" x 9" x 45"	A, B, C, D-t	Top.
12 pieces	3/4" x 8" x 5'	B, F, H-l	Trapping elements, sides.
6 pieces	3/4" x 8" x 3'	D, F-i	Trapping elements, bottoms.
6 pieces	3/4" x 4" x 3'	E, F-j	Trapping elements, front bottom.
12 pieces	3/4" x 2" x 3'	D, E, F, H-k	Trapping elements, tops.
12 pieces	3/4" x 1-1/2" x 5'	A, F, G-d	Trapping elements, backs.
12 pieces	3/4" x 1-1/2" x 37-1/2"	D, G, H-m	Trapping elements, backs.
84 pieces	3/4" x 3/4" x 5"	E, F-n	Trapping elements, Z's.
84 pieces	3/4" x 3/4" x 7-1/2"	E, F-o	Trapping elements, Z's.
12 pieces	3/4" x 3/4" x 5"	I-v	Trapping elements, stops.
500 lin.ft.	Screen moulding	Not shown	Trapping elements, all screen edges.

Hardware

1 roll	screen wire, galv., 18-mesh, 37" wide, 100 ft. long	D-z, G, H	Backs, tops, and Z's of trapping elements.
32	carriage bolts with nuts and washers, 3/8" x 3-1/2"	A, B, C-r	For bolting long cross pieces to uprights.
32	carriage bolts with nuts and washers, 3/8" x 5-1/2"	A, C-s	For bolting uprights to frame.
1 lb.	nails, 8d common		
5 lbs.	nails, 8d boxing		
1 lb.	screen tacks		
1 lb.	brads, 1"		
60	screws, 1-3/4", No. 8,) F. H. B.)		
6 pieces	sheet iron, galv., 26 ga.,) 6" x 6")	G-p	For tacking screen on trapping elements. (Small doors for trapping elements. {If no doors are used, make backs of (trapping elements entirely of screen (wire and fasten back to rest of elements (with eight screws. Sides of passageway to protect trapping elements from animals.
12	turn knobs, small	B-g	
2 pieces	fencing, stock, heavy, large mesh		
1 lb.	staples, fencing	B-g	Fastening stock fencing to sides of pas- sageway.
2 pieces	canvas, heavy, 20" x 30"	C, I-y	Short curtains on short cross pieces.
4 pieces	canvas, heavy, 20" x 6'	C, I-x	Long curtains on opposite side of short cross piece.
8 pieces	canvas, heavy, 4" x 6'	I-y'	Long strips, on X-shaped cross member.
24	hook and eye screws	I-he	For holding trapping elements in place.

Explanation of Figures

- Fig. 1, A. Side view of trap.
- Fig. 1, B. End view of trap.
- Fig. 1, C. Longitudinal section of trap (narrow canvas strips not shown).
- Fig. 1, D. Cross section of trap.
- Fig. 2, E. Front view of trapping element.
- Fig. 2, F. Interior view of one end of trapping element showing construction of Z's for attachment of screen wire.
- Fig. 2, G. Back view of trapping element.
- Fig. 2, H. Top view of trapping element.
- Fig. 2, I. Top view of trap (roof removed) showing construction of X members and attachments of curtains and strips.
- Fig. 3. Cold chisel for cutting holes in trap.

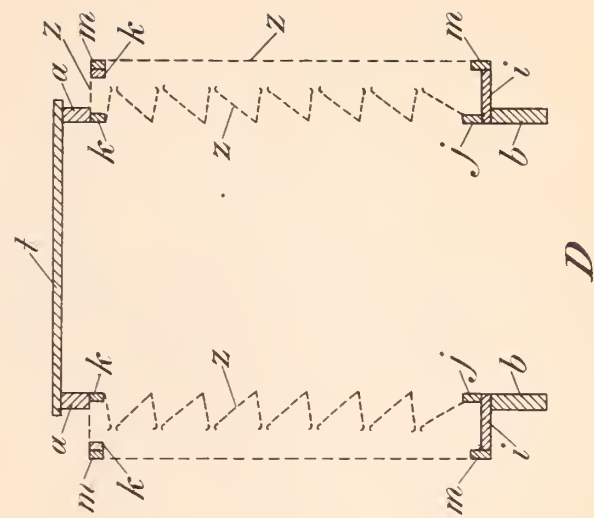
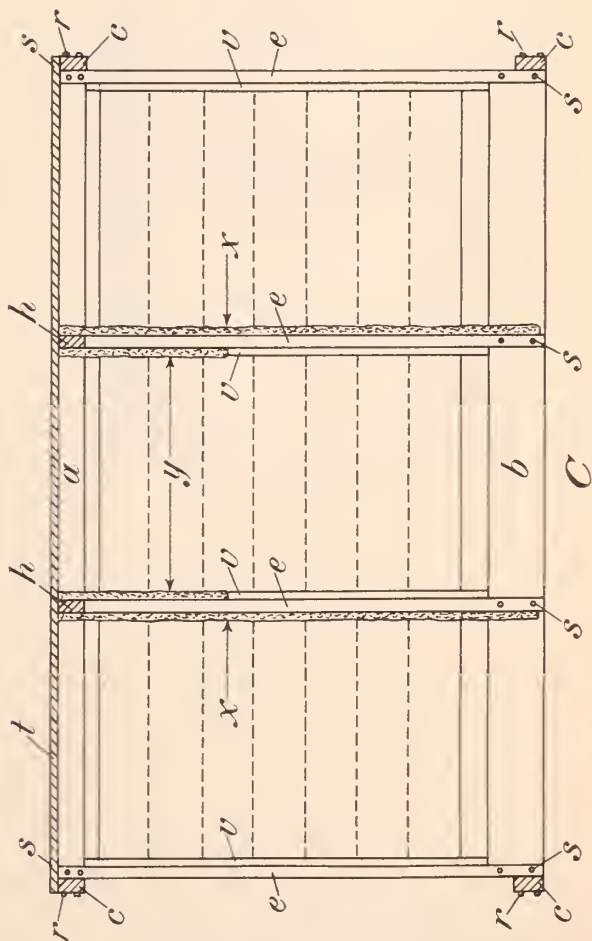
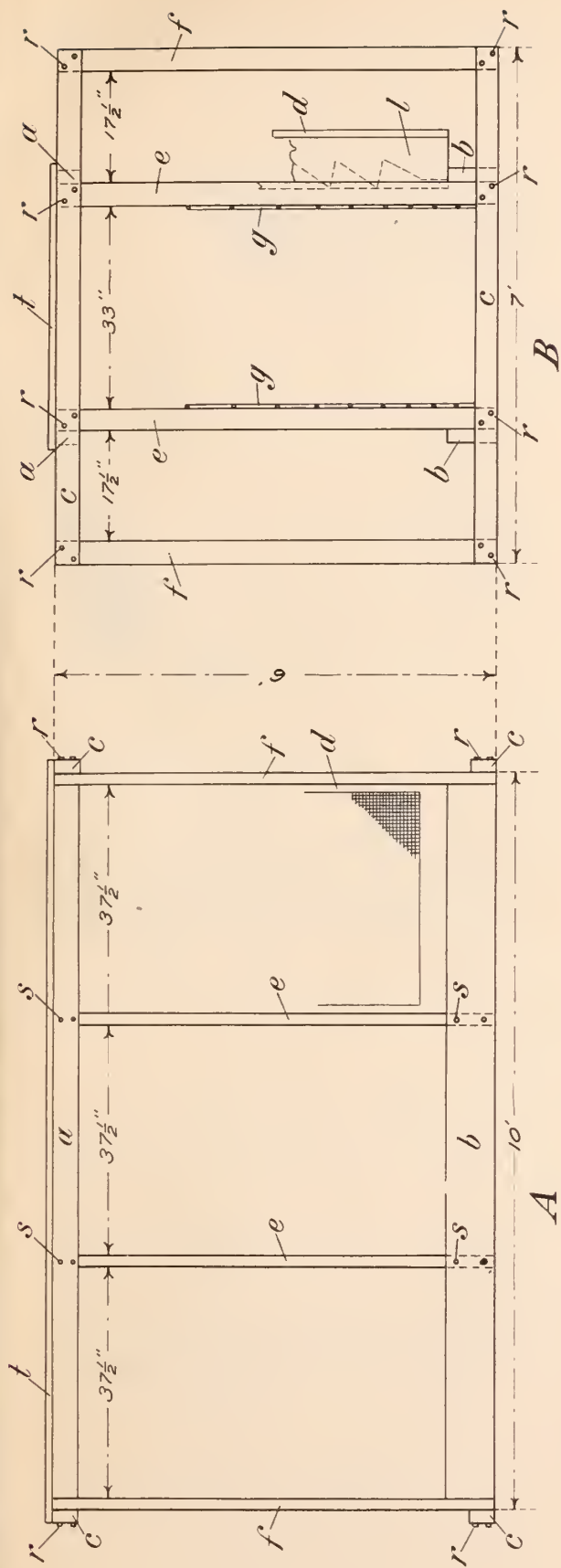
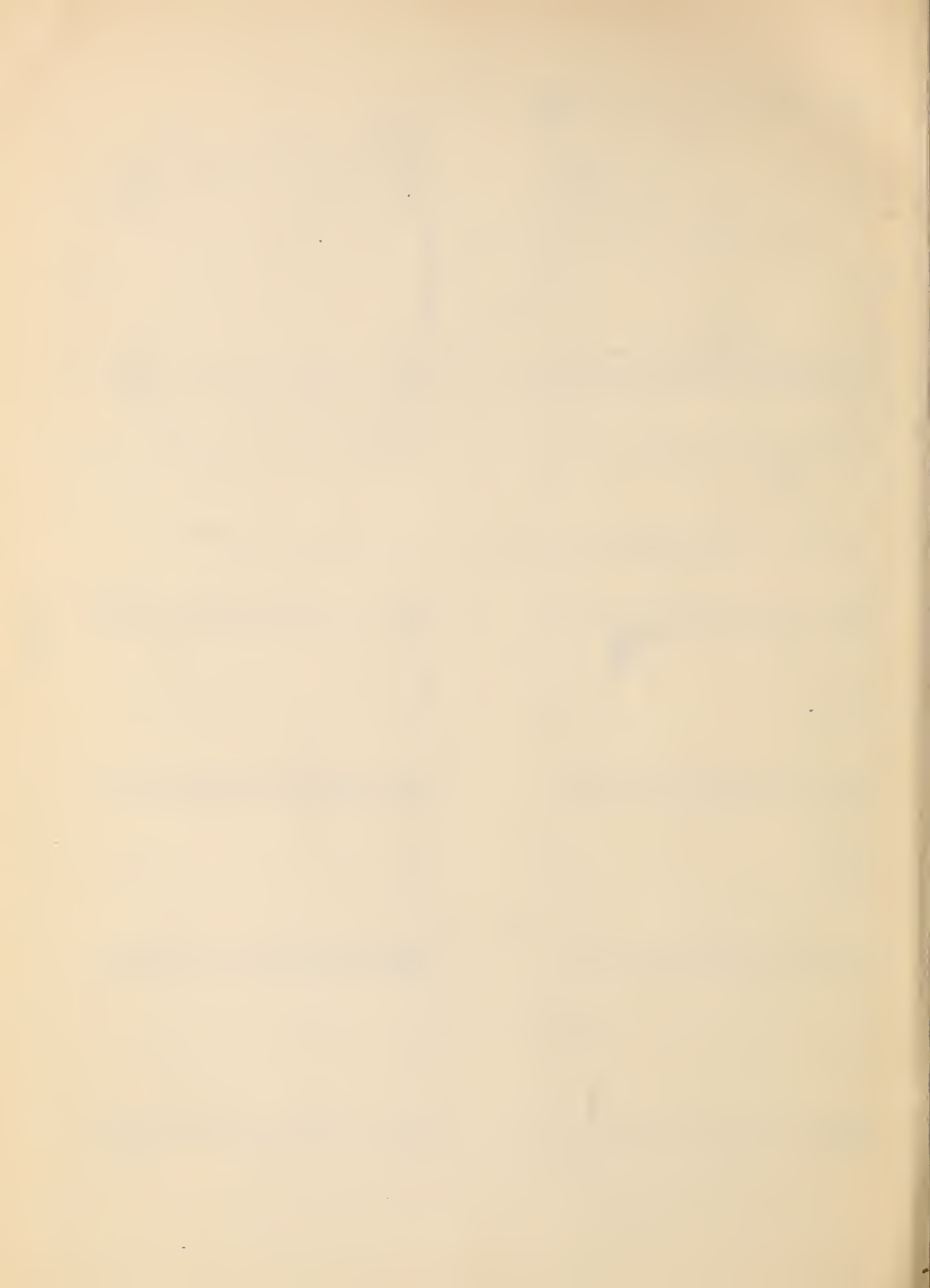


FIG. 1



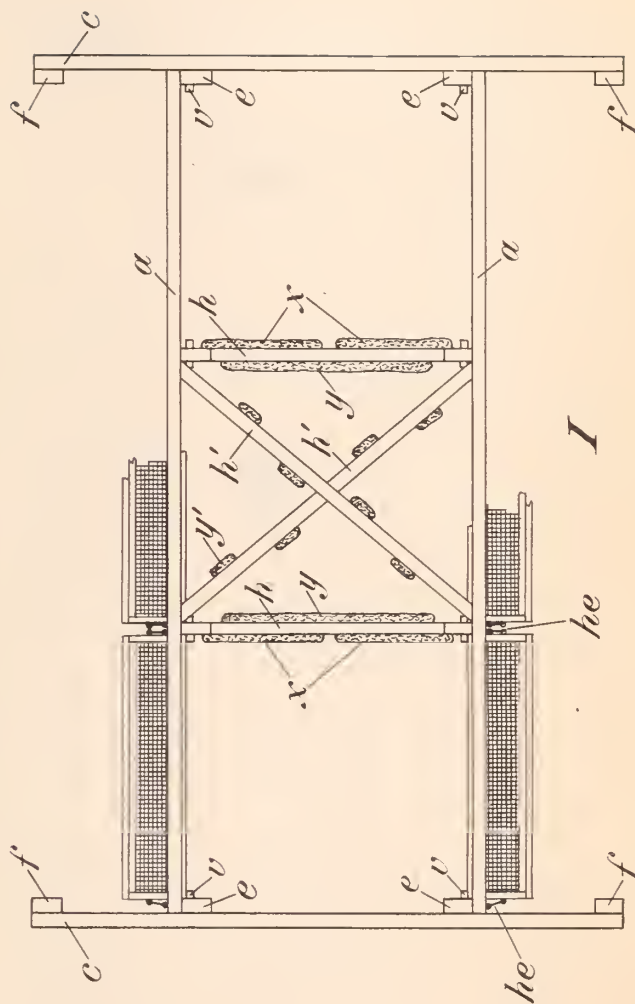
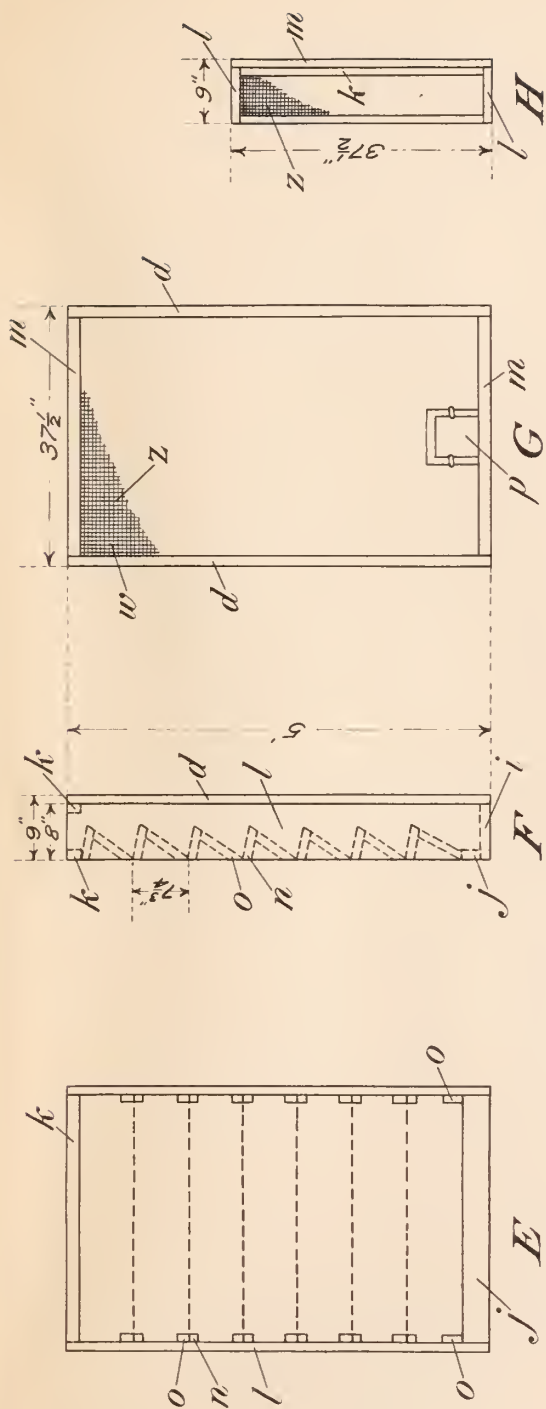


FIG. 2



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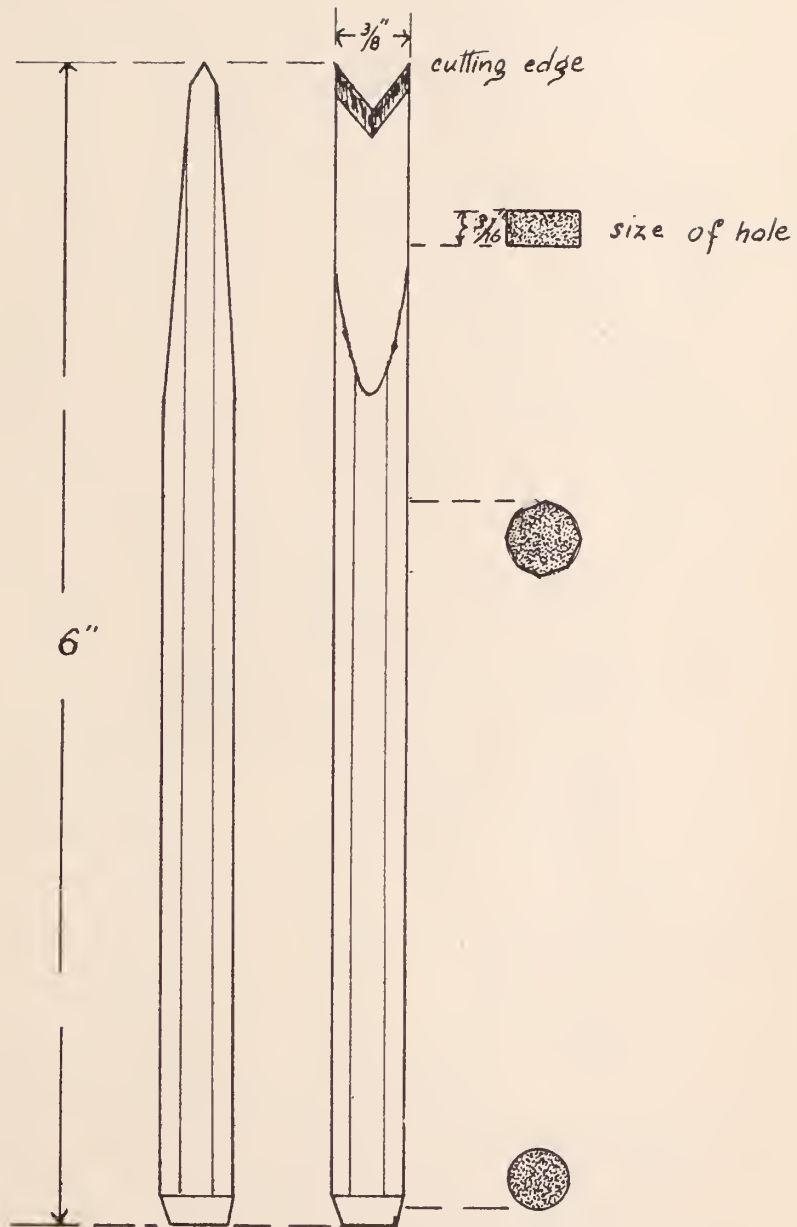


Figure 3.

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